REMARKS/ARGUMENTS

Reconsideration of the rejections set forth in the Office Action dated December 1, 2004 is respectfully requested.

Claims 1-25 were rejected. Claim 26 has been added. As such, claims 1-26 are currently pending.

New claim 26 recites that a network includes a protected node and links connected to the protected node. Support for this claim may be found in the Specification, *e.g.*, on page 12 at lines 2-7).

The Specification has been amended to provide U.S. Patent Application numbers for two co-pending U.S. Patent Applications which are referenced in the Specification.

Claims 1, 9, 17, and 25 have been amended to include specifying an optimality function, and to recite that performing linear programming operations includes minimizing the optimality function while satisfying the set of constraints. Support for these amendments may be found in the Specification, as for example on page 18 at lines 1-12. Claims 4, 12, and 20 have been amended to maintain consistency from their respective base claims.

Claims 9-16 have been amended to recite a computer-readable medium rather than a computer program product which includes a computer-readable medium.

Rejections under 35 U.S.C. § 101

Claims 9-16 have been rejected by the Examiner under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. On page 2 of the Office Action

dated December 1, 2004, the Examiner has stated that "Applicant is required to explicitly claim the code operating or executing on a computer in order to overcome this rejection."

The Applicants have amended claims 9-16 to recite a computer-readable medium in a sincere effort to overcome the Examiner's rejection of claims 9-16 under 35 U.S.C. § 101. It is not clear to the Applicants whether the Examiner would consider such amendments as reflecting the Examiner's requirement of explicitly claiming code operating or executing on a computer. However, the Applicants respectfully note that Section 2106 of the MPEP includes the following paragraph:

> Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things," nor are they statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed aspects of the invention which permit the computer program's functionality to be realized. In contrast, **a claimed computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program's functionality to be realized, and is thus statutory**. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. [*emphasis added*]

Since claims 9-16 how claim a computer-readable medium encoded with code (a computer program), in light of the above-referenced paragraph from Section 2106 of the MPEP, it is believed that claims 9-16 are now directed to statutory subject matter. Accordingly, the Applicants respectfully submit that the rejection of claims 9-16 under 35 U.S.C. § 101 are now overcome.

Rejections under 35 U.S.C. § 102

Claims 1-25 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,744,727 issued to Liu et al. (herein and after "Liu").

As amended, claim 1 recites a method for placing fast reroute backup tunnels that includes specifying an optimality function, and performing linear programming operations based on a set of constraints and the optimality function. Performing the linear programming operations includes minimizing the optimality function while satisfying the set of constraints.

In the Office Action dated December 1, 2004, the Examiner has argued that Liu teaches of matrices, and that matrices are linear operations. It is respectfully submitted that though Liu appears to teach of matrices, there is no teaching or suggestion of performing any linear programming operations in Liu. On page 3 of the Office Action, the Examiner notes that at lines 50-51 of column 16 of Liu, Liu mentions instructions encoded in a computer program. The Examiner appears to indicate that instructions encoded in a computer program somehow teaches of linear programming operations. It is respectfully submitted that Liu makes no mention of linear programming operations, and as known to those skilled in the art, the "programming" in linear programming is not a reference to computer programming. As such, since Liu does not appear to teach of performing linear programming operations, particularly those based on a set of constraints and an optimality function, to find backup tunnels, claim 1 is believed to be allowable over Liu for at least this reason.

Claim 1 specifically recites that performing linear programming operations includes minimizing an optimality function while satisfying a set of constraints. Liu does not appear to teach of such a limitation. There appears to be no discussion in Liu of minimizing any function while satisfying a set of constraints. It is respectfully submitted that determining a minimum amount of spare capacity required as taught by Liu at lines 41-43 of column 8 is not the same as, and does not suggest, minimizing an optimality function while satisfying a set of constraints. Therefore, claim 1 is believed to be allowable for at least this additional reason as well.

Claims 2-8 each depend either directly or indirectly from claim 1. As such, claims 2-8 are each believed to be allowable over Liu for at least the reasons set forth above with respect to

claim 1. Each of these dependent claims recite additional limitations which, when considered in light of claim 1, are believed to further distinguish the claimed invention over the art of record.

By way of example, claim 2 requires that a <u>sum of backup tunnel bandwidths of tunnels exiting a first node should *equal* a requested total bandwidth</u> of backup tunnels for a node pair that includes the first node. Claim 2 further requires that a <u>sum of backup tunnel bandwidths of tunnels entering a second node of the node pair should *equal* the requested total bandwidth</u> of the backup tunnels. As Liu does not appear to teach of a sum of backup tunnel bandwidths or of a requested total bandwidth of backup tunnels for a *node pair*, it is respectfully submitted that Liu does not teach the limitations of claim 2. It is noted that although Liu appears to mention that a fault management table of a link stores working paths used by node pairs and minimum spare capacity values required on the link for protecting other links (Liu, column 11 at lines 20-36), there is no teaching or suggestion that a sum of backup tunnel bandwidths of backup tunnels exiting a first node should equal a requested total bandwidth of tunnels for the node pair.

At column 8 of Liu, lines 44-65, Liu teaches that a vector w (which represents the working capacity allocation of a network as taught in column 6, lines 21-22) of the example network of Liu gives a total working capacity requirement of thirteen. Liu further teaches that a vector s (which represents the spare capacity allocation required for all links within a network as taught in column 6, lines 23-24) gives a total spare capacity requirement of eleven. Liu does not teach of or mention a sum of backup tunnel bandwidths. However, at column 8 of Liu, Liu teaches that a total working capacity is <u>not equal</u> to a requested total bandwidth (a spare capacity allocation). Hence, it is respectfully submitted that even if the working capacity is considered to be the sum of backup tunnel bandwidths, such a working capacity is not taught by Liu to be equal to a requested total bandwidth. As such, claim 2 is also believed to be allowable for at least these additional reasons.

Independent claims 9, 17, and 25, as amended, recite similar limitations as those recited in amended claim 1. Accordingly, claims 9, 17, 25, and their respective dependents are believed to be allowable over Liu for at least the reasons set forth above with respect to claim 1.

Conclusion

For at least the foregoing reasons, the Applicants believe all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8690.

Respectfully submitted,

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